



## Claims

1. An apparatus for generating foam, comprising:
  - (a) a diffuser unit;
  - (b) a housing defining a central axis and having a proximal end, a distal end and an internal chamber within which is positioned the diffuser unit;
  - (c) a first conduit in communication with the proximal end of the housing for supplying a gaseous stream to the diffuser unit;
  - (d) a second conduit in communication with the proximal end of the housing for supplying a water and foam mixture to the diffuser unit; and
  - (e) an outlet located at the distal end of the housing for expelling an aerated water and foam mixture from the housing;

wherein said diffuser unit includes a conically shaped dispersing element aligned with the central axis of said housing;

wherein the water and foam mixture supplied to said diffuser unit flows on a flow axis aligned with the central axis of the housing, and wherein the conically shaped element is aligned with the flow axis of the water and foam mixture; and

wherein the diffuser unit transforms the water and foam mixture supplied to the diffusing unit to a thin film.

8. The apparatus as defined in claim 1, wherein the diffuser unit includes a plurality of axially aligned blade structures that bisect the housing.

9. The apparatus as defined in claim 8, wherein the plurality of axially aligned blade structures includes at least two crisscrossing blades that define an internal void.

10. The apparatus as defined in claim 9, wherein the diffuser unit further comprises a dispersing element positioned within said internal void and aligned with the central axis of the housing.

12. An apparatus for generating foam, comprising:

- (a) a diffuser unit;
- (b) a housing defining a central axis and having a proximal end, a distal end and an internal chamber within which is positioned the diffuser unit;
- (c) a first conduit in communication with the proximal end of the housing for supplying a gaseous stream to the diffuser unit;
- (d) a second conduit in communication with the proximal end of the housing for supplying a water and foam mixture to the diffuser unit; and
- (e) an outlet located at the distal end of the housing for expelling an aerated water and foam mixture from the housing;

wherein the first conduit surrounds the second conduit for a predetermined distance; and

wherein the second conduit passes through an outside wall of the first conduit.

13. The apparatus as defined in claim 1, further comprising a pressure gauge associated with at least one of the first conduit and the second conduit.

14. The apparatus as defined in claim 1, further comprising a valving mechanism operatively associated with at least one of the first conduit, the second conduit and the outlet.